

**Amendments to the Specification**

Please replace the paragraph beginning at page 1, paragraph [0004], with the following rewritten paragraph:

[0004] Some designs of power amplifiers are known to be more efficient than others. However, not all types of amplifiers are well adapted to telecommunication or radar applications. Such applications typically require amplification systems which meet specifications relating to linearity, bandwidth and/or adaptability.

Please replace the paragraph beginning at page 2, paragraph [0007], with the following rewritten paragraph:

[0007] The characteristics of an amplification system depend not only upon the design of the amplifier itself but also depend upon the way in which the amplified signal is modulated. The so-called delta-sigma modulator has been studied extensively and has some desirable properties. Specific embodiments of the delta-sigma modulator are described, in United States patent Nos. 5,446,460 and, 5,714,916. Delta-sigma modulators are analysed and discussed in S.R. Norsworthy et al., *Delta Sigma data Converters: Theory Design and Simulation*, IEEE Press, New York, 1997; James Cherry and W. Martin Snelgrove, *Continuous Time Delta Sigma Modulators for High speed A/D Conversion*, Kluwer Academic Publishers, Boston, 2000; and, Arun Jamayaraman et al., *Linear high-efficiency Microwave Power amplifiers using Band-pass Delta Sigma Modulators*, IEEE Microwave and Guided Letters Vol. 2 No. 3 March 1998, each of which is hereby incorporated by reference.

Please replace the paragraph beginning at page 4, paragraph [0012], with the following rewritten paragraph:

**[0012]** Figure 1 is a block diagram of an amplification system 10 according to the invention.

Amplification system 10 comprises a modulator 12 which receives a signal 13 to be amplified at its input 14. Modulator 12 produces a digital output signal. Modulator 12 may be a delta sigma modulator. Modulator 12 has an output 16 coupled to an input 18 of a high efficiency amplifier 20. Amplifier 20 may be a class S amplifier. An output 22 of amplifier 20 is coupled to an antenna system 24. Preferred embodiments include a linearizer 30. Linearizer 30 is coupled to receive the signal 13 at input 14 and/or the signal 19 at output 22 and to develop a correction signal which is combined with the signal at a point before it is received at the input 18 of amplifier 20.

Please replace the paragraph beginning at page 5, paragraph [0014], with the following rewritten paragraph:

**[0014]** Modulator 12 may comprise a delta-sigma modulator, which may be a band-pass delta-sigma modulator (BPDSP) of Nth order (typically 4<sup>th</sup> order) with cascaded stages of 1 bit or multi-bit analog to digital converters (ADCs) and digital to analog converters (DACs).

Modulator 12 converts the signal 13 to a rectangular wave output signal 17. Signal 17 drives amplifier 20. Input RF signal 13 has a frequency in excess of about 300 kHz and may be a microwave frequency signal (i.e. signal 13 may have a frequency of about 800 MHz or more).

Please replace the paragraph beginning at page 7, paragraph [0018], with the following rewritten paragraph:

[0018] Figure 2 shows a simple class S amplifier **20A**. Amplifier **20A** has a pair of power transistors **Q1** and **Q2** arranged in a totem-pole configuration. Transistors **Q1** and **Q2** operate as switches controlled by signals **17A** and **17B** at inputs **18A** and **18B**, which together constitute an input **18** of amplifier **20A**. Transistor **Q2** is connected between output **22** and ground. Transistor **Q1** is connected between an output **22** and a direct current power supply **40**. Power supply **40** provides electrical power at a suitable voltage, which may be, for example, in the range of 6V to 60 V.

Please replace the paragraph beginning at page 8, paragraph [0020], with the following rewritten paragraph:

[0020] Antenna **24** is connected to output **22** of amplifier **20A** by a dc blocking device, such as a capacitor **42** and a filter **43**. In the illustrated embodiment filter **43** comprises an inductor **44** ~~conducted~~ coupled in series between dc blocking capacitor **42** and antenna **24** and a capacitor **45** connected across antenna **24**.

Please replace the paragraph beginning at page 13, paragraph [0036], with the following rewritten paragraph:

**[0036]** The output signal  $y(nT)$  can be a pulse density modulated signal. As shown in Figure 6, such an output from delta sigma modulator 12 is a binary digital signal that can be considered as the sum of an input signal and associated quantization noise. Modulator 12 is provided with digital filters to shape the output noise so that its spectrum has a valley corresponding to where the input spectrum falls in. Out-of-band noise can ~~be~~ then be removed using properly designed bandpass filters to produce an approximate replica of the original signal.

Please replace the paragraph beginning at page 13, paragraph [0037], with the following rewritten paragraph:

**[0037]** An extended interface 80, such as an optical interface, may be provided to couple the output signal from delta sigma modulator 12 to the input of amplifier 20. Delta sigma modulator 12 and amplifier 20 may be in widely separated locations. For example, delta sigma modulator 12 may be located in a location where a mains power supply is available, while amplifier 20 may be located at a mountain top relay station. The extended interface may, for example, comprise an optical fiber data transmission line.